

Abstract of the Disclosure:

An intradyne receiver provides a received intradyne signal X which comprises at least two, mutually phase-shifted, and N-ary phase shift keyed intradyne part signals X_k . Here $N=2$ for binary and $N=4$ for quaternary PSK. For carrier recovery purposes their frequency is multiplied by a factor of N in an intradyne frequency multiplier FM. After passing a lowpass filter TPY the filtered, frequency-multiplied intradyne signal is passed through an intradyne frequency divider IDF1, IDF2 with carrier intradyne signals $C1$, $C2$ as output signals that allow to demodulate the received intradyne signal X . The intradyne frequency divider undertakes more than one state change while changing the phase of the carrier intradyne signal by $2\pi/N$. It can be formed as a regenerative intradyne frequency divider. When used for coherent optical data transmission this allows to tolerate comparatively large laser line widths.

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